K083058
Page 1 of 3

CONFIDENTIAL

510(k) SUMMARY
Ion Beam Applications S.A.

APR 15 2009

Applicant

Ion Beam Applications S.A.
Chemin du Cyclotron, 3
B-1348 Louvain-la-Neuve
Belgium
Attention : Mr Yves Jongen
Phone : 32-10-47-58-90
Facsimile: 32-10-47-58-10
E-mail: yves.jongen@iba-group.com

Contact Person and Agent for Ion Beam Applications S.A.

John B. Reiss, Ph.D., J.D.
Saul, Ewing, Remick & Saul
Centre Square West 38th Floor
Philadelphia, PA 19102
Phone: (215) 972-7124
Facsimile: (215) 972-1906
E-mail: jreiss@saul.com

Classification Name

Medical charged-particle radiation therapy systems. (21 C.F.R. §892.5050)

Predicate Devices

The PTS is substantially equivalent to the previously cleared Loma Linda University Medical Center ("Loma Linda") Proton Beam Therapy device (K872369) and the Harvard University Cyclotron Laboratory Proton Beam Therapy device, a pre-1976 device. The PTS and its predicate devices have the same intended use and principles of operation, and are substantially equivalent in terms of performance and technological characteristics.

Intended Use

The PTS is a medical device designed to produce and deliver a proton beam for the treatment of patients with localized tumors and other conditions susceptible to treatment by radiation.

Description of the device modifications

The cleared PPS solution currently used by IBA (K983024) is a homing device with three rotary axes carried on three linear axes providing x, y, and z translations. Additionally pitch and roll movements are possible provided a dynamic range of ±3°. By design, the motion speed of the system is limited. The new Robotic PPS is a *SCARA-type* arm robot. The X- and Y-translations from the current PPS have been replaced by two rotations around vertical axes. The vertical motion (Z-axis) from the current PPS remains a translation in the Robot PPS. In contrast to a commercial 6 axis robot, this Robot PPS design is such that a broken axis will not result in a severe consequence (such as patient fall). Furthermore, speed and acceleration of the Robot PPS are limited by design to a level acceptable in radiation therapy. The conventional and Robot PPS have the precision error.

Technological Characteristics

The device is designed to: (1) create and deliver the proton beam to the patient treatment location; (2) produce a transverse and longitudinal dose distribution appropriate for the patient's treatment; and (3) deliver the designated dose to the patient's treatment site. The PTS has two primary components: (1) the beam delivery equipment, which directs the proton beam to the patient's treatment site within the patient treatment location and ensures the patient critical functions are properly and safely accomplished; and (2) the beam production equipment, which includes a cyclotron and delivery system to produce the proton beam and deliver it to the patient treatment locations. In addition to these primary components, the PTS includes a Therapy Safety System to protect against unsafe conditions, having both automatic and manual controls to shut down the PTS in the event problems occur; and a computer-based Therapy Control System which controls the parameters of the proton beam.

Following the successive changes to the original 510(k) submission, several features have been already added:

(1) PPVS (K053641): The Patient positioning verification system (PPVS) is interfaced to a Treatment Planning System (TPS) or an Oncology Information System (OIS) for downloading the treatment plan and the associated Digitally Reconstructed Radiographs (DRR) from the TPS in DICOM format;

(2) SIS and US (K060695): addition of 2 treatment modes. The Single Scattering (SIS) technique is dedicated to the irradiation of fields smaller than seven

centimetres, the Uniform Scanning (US) technique is an active technique for spreading beam in a transversal direction to large irradiation fields;

(3) IOIS (K061913) - An automatic network-based interface from an Oncology Information System (OIS) to the PTS for the input of patient information, which information initially is entered into the OIS by means of a Graphical User Interface has been added.

(4) Pencil Beam Scanning (K082416) - The pencil beam scanning is defined as the act of moving a charged particle beam of particular properties and/or changing one or more of the properties of that beam (e.g. Intensity, size, position, etc.). The goal of this beam delivery is to deliver the appropriate proton fluence according to a prescription. This prescription provides a map of the fluence that is necessary to deliver at each location on the target. Thus the beam is moved to each location on the target and the appropriate fluence is deposited at each location.

Substantial Equivalence Discussion

The PTS is substantially equivalent to both the Loma Linda (K872369) and the Harvard Cyclotron Laboratory (« HCL ») proton therapy devices. The HCL is a pre-1976 device that was constructed in 1949.

Like its predicate devices, the PTS is a device designed to produce and deliver a proton beam for treatment of a patient. Also like its predicate devices, it is intended for use in the therapeutic application of a proton beam for the treatment of localized tumors or other disease that are susceptible to treatment by radiation.

The predicate devices also provide the same or substantially equivalent functions, characteristics, and accessories as does the PTS. All these devices are comprised of beam production equipment which generates the beam used by the beam delivery systems.

The technological aspects of a patient treatment consist of protons generated by the beam production equipment, directed to the patient's treatment site by the beam shaping system which is either mounted on a rotatable gantry, or in a fixed position. The patient is put into the correct position relative to the beam by a positioning system, which system is not affected by the modification made by this submission.

The facilities include patient treatment rooms, with each having a different number of rooms. The PTS device may service three to seven rooms, the Loma Linda predicate has four rooms and the HCL predicate has two. Like the predicate Loma Linda and HCL devices, the PTS provides fixed beam treatment stations. The PTS also includes treatment rooms which have isocentric/rotatable gantries similar to those used in the Loma Linda facility, but the space enclosed by the gantry is larger than at Loma Linda so that the patient can be rotated horizontally, as at HCL, allowing more choice of treatment direction.

The PTS and predicate Loma Linda devices are equipped with nozzles that provide beam scattering and beam scanning, the nozzles for the HCL predicate use beam scattering. All three devices have beam-limiting collimators and range verifiers.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
9200 Corporate Boulevard
Rockville MD 20850

APR 15 2009

ION Beam Applications S.A.
% John B. Reiss, Ph.D., J.D.
Saul, Ewing, Remick & Saul
1500 Market Street
Centre Square West – 38th Floor
PHILADELPHIA PA 19102

Re: K083058
Trade/Device Name: IBA Proton Therapy System (PTS)
Regulation Number: 21 CFR 892.5050
Regulation Name: Medical charged-particle radiation therapy system
Regulatory Class: II
Product Code: LHN
Dated: February 6, 2009
Received: February 9, 2009

Dear Dr. Reiss:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

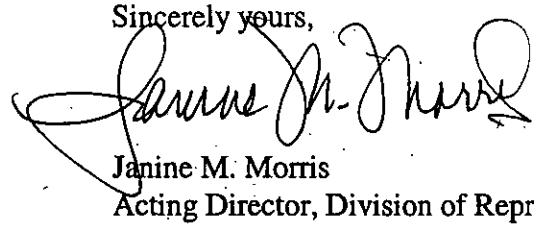
If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please contact the Center for Devices and Radiological Health's (CDRH's) Office of Compliance at one of the following numbers, based on the regulation number at the top of this letter.

21 CFR 876.xxx	(Gastroenterology/Renal/Urology)	(240) 276-0115
21 CFR 884.xxx	(Obstetrics/Gynecology)	(240) 276-0115
21 CFR 892.xxx	(Radiology)	(240) 276-0120
Other		(240) 276-0100

Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please contact the CDRH/Office of Surveillance and Biometrics/Division of Postmarket Surveillance at 240-276-3464. For more information regarding the reporting of adverse events, please go to http://www.fda.gov/cdrh/mdr/.

You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (240) 276-3150 or at its Internet address http://www.fda.gov/cdrh/industry/support/index.html.

Sincerely yours,



Janine M. Morris
Acting Director, Division of Reproductive,
Abdominal, and Radiological Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

Indications for Use

510(k) Number (if known): K083058

Device Name: IBA Proton Therapy System (PTS)

Indications for Use:

The PTS is a medical device designed to product and deliver a proton beam for the treatment of patients with localized tumors and other conditions susceptible to treatment by radiation.

Prescription Use √ AND/OR Over-The-Counter Use_____
(Part 21 CFR 801 Subpart D) (21 CFR 807 Subpart C)

PLEASE DO NOT WRITE BELOW THIS LINE-CONTINUE ON ANOTHER PAGE IF NEEDED)

Concurrence of CDRH, Office of Device Evaluation (ODE)

(Division Sign-Off)
Division of Reproductive, Abdominal and Radiological Devices
510(k) Number K083058